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ABSTRACT

There is a strong need to understand, monitor, and enhance educational quality. This paper reports on a project that developed a framework of indicators for monitoring educational quality in Hong Kong primary schools. The framework was developed through various case studies and 2 large surveys of over 200 Hong Kong primary schools (involving over 650 classes, 3,800 teachers, and 20,000 students) during 1991-95. A preliminary framework, based on the research literature, included indicators at the student individual level, the classroom level, the teacher individual level, the teacher group level, and the organizational level. The framework was tested and developed through the 2 surveys (the first conducted in 1992 and the second in 1993-94) and a total of 12 case studies. Survey data was used to map the education profiles of Hong Kong primary schools by means on indicators; by percentage of schools in high, satisfactory, and low performance; by distribution of schools on each indicator; and by profiles of characteristics of effective and ineffective schools. Six tables and seven figures are included. (Contains 76 references.) (LMI)

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# A Framework of Indicators of Education Quality in Hong Kong Primary Schools: Development and Application

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# A Framework of Indicators of Education Quality in Hong Kong Primary Schools: Development and Application*

( Abstract )

This paper aims to report a project on developing a framework of indicators for monitoring education quality in Hong Kong primary schools.

The framework was developed through various in-depth case studies and two large sample surveys involving over 200 Hong Kong primary schools (involving over 650 classes, 3800 teachers, and 20,000 students) in a period from 1991-1995. Based the past research literature, a preliminary framework was first proposed, including indicators at different levels: at the student individual level--students' affective and academic performance; at the student group level--classroom's human and physical environment and classroom management; at the teacher individual level-- job attitudes, satisfaction, and beliefs; at the teacher group level-- social norms and professionalism; at the organizational level--organizational culture, structure, effectiveness, quality of school physical environment, principal-teachers relationship, leadership, and need for school improvement. The framework was then tested and developed through the case studies and two surveys.

Based the framework and a random sample of 94 schools, the education quality profiles of Hong Kong primary schools were mapped by different approaches including: by means on indicators, by % of schools in high, satisfactory, and low performance, by distribution of schools on each indicator, and by profiling characteristics of effective and ineffective schools. Stakeholders of individual schools, groups of schools, and the whole school system can use the framework and these profiles to monitor education quality, conduct school improvement, and develop policy options.

A number of development seminars and talks had been organized to help the involved schools of some important sponsoring bodies to understand the findings and use them for school improvement. Since the framework is research based, the findings from the project may also contribute to future research on education quality and school effectiveness. It is hoped that the findings and the framework are useful to current educational reforms not only in the local context but also in international communities.

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## Introduction

Since 1980s, Hong Kong has developed very quickly in nearly every aspect of the society. Responding to the rapid transformation and development of the society, the school system has been expanded largely and a number of policy efforts have been made to improve different aspects of education such as curriculum, language education, student guidance, student streaming, management, teacher-student ratio, physical environment, and teacher education (Education Commission, 1984-1996). These educational reforms in Hong Kong raise some critical issues in school management and educational policy making:

(1) " How Good ?" After the rapid expansion of school system in the past decades, the Hong Kong government is now aware of the importance of quality of education as well as the potential damage to quality due to poor management existing in schools. The Education & Manpower Branch and Education Department (1991) had issued a policy entitled " School Management Initiative" inducing a great reform of management in Hong Kong aided schools. Although this policy aims at discharging accountability and improving quality of education, it suffers from lack of a system of indicators of education quality for monitoring and evaluating school performance. Without a comprehensive system of indicators, up to now we do not know how good our schools are. It is a very serious problem when compared with the huge investment in our school system.

(2) "How to Improve? " Due to the rapid change of our society, the role of schools becomes very complicated and demanding. Many people worry whether the traditional management style and educational process in many schools are effective for education and implementation of new programs. What are the characteristics of administrative and organizational processes in our schools? What are the links between organizational factors and quality of education in schools? How should the administrative and organizational processes in schools be adapted to the new roles? All these questions intend to search how to improve quality of education through organizational change and development in school. Unfortunately, we know very little because there are very few studies in the context of Hong Kong.

(3) " Primary Schools as Black Boxes ? " Compared with the secondary schools, the primary schools seem to be black boxes in Hong Kong. Very few research has been done in the area of educational administration and organizational process in Hong Kong primary schools. This blank area is hindering any effort for improving quality of education provided in primary schools.

Some other rapidly developing societies in the Asia-Pacific areas are facing similar problems of education quality in development of education. Currently there are also movements of effective schools, school-based management, and educational reforms in search of education quality in developed countries such as U.S.A., U.K., and Australia (Cheng, 1993b, 1994a). There is a strong need to understand, monitor, and enhance education quality not only in some developing areas but also in some developed countries.

Responding to the above needs and issues, a research project had been started in 1991 with two objectives:

1. To develop a framework of indicators that can provide information to describe the performance and enduring features of Hong Kong primary schools, monitor education quality, diagnose schooling process, and inform school management and policy-making;
2. To study the relationship of student educational performance to process characteristics at the school level and classroom-level; specifically, to investigate the organizational determinants (i.e. manipulable factors) of education quality in order to provide information and insight for improvement and development in Hong Kong primary schools.

This paper focuses on objective 1 and reports the findings on developing a framework of indicators of education quality. The paper is divided into two parts: Part I will provide an overview of the project, the theoretical background and the development of the framework. Part II will summarize the major findings of the project and the application of the framework.

# Part I

# Overview of the Project

## Conception of Education Quality in School

To different people, the definition of education quality may be different and so the indicators used to describe education quality may be different (Hughes, 1988; Fuller, 1986). Some may emphasize the quality of inputs to the education systems but the other on the quality of processes and outcomes. The definition of education quality may be associated with the fitness for use (Juran, 1988), the satisfaction of strategic constituencies' (e.g. policy-makers, parents, school management committee, teachers, students, etc.) needs, or the conformance to strategic constituencies' requirements and expectations (Crosby, 1979). According to the ideas of total quality management (Tenner & Detoro, 1992) and system approach, education quality may be defined as "the character of the set of elements in the input, process, and output of the education system that provides services that completely satisfy both internal and external strategic constituencies by meeting their explicit and implicit expectations" (Cheng, 1995).

Since the conception of education quality involves the input, process, output and multiple constituencies of an education system, it is multi-dimensional and cannot be easily assessed by only one indicator. Furthermore, the expectations of different constituencies on education may be very different, if not contradictory. It is often difficult for a school or an education institute to meet all the expectations or

needs at the same time. Therefore, it is not rare that the education quality of a school is high to the perceptions of some constituencies but not to the other, or, some aspects of a school may be high quality but the other aspects may be low quality (Hughes, 1988). In order to assess education quality, different indicators may be developed to give information about the performance of an education system in different aspects. Education quality indicator may be defined as the indicator used to describe the key aspects of education quality in input, process, & outcome at the school level or at the system level. The difference in the choice of and the emphasis on indicators may reflect the diverse interests and expectations among the concerned constituencies.

According to Scheerens (1990) and Herpen (1989), the development of education indicators seems to have experienced three trends. The first trend was the transition from social indicators of education (i.e. used to describe the educational aspect of the population) to education indicators used to describe some characteristics (mainly input and resource measures) of education systems. The second trend was the shift towards more comprehensive indicator systems by adding output and context measures and growing interest in manipulable factors and process characteristics. The third trend was more concerned with process characteristics in schools and therefore was to measure data at more than one aggregation level (i.e. national, school, classrooms, students, etc.). Up to now there seems to be no universal set of education indicators that is appropriate for all purposes of different regions or countries.

Since we were more interested in education improvement and school effectiveness, the development of education quality indicators was in light of the third trend, and focuses more on the process characteristics. In this project, the literature that contributed to the development of a system of indicators of education quality were divided into three categories:

(1) the previous studies on education indicators, performance indicators, quality indicators, and accountability system indicators, such as Nuttall (1990), Windham (1988), Oakes (1986), Benveniste (1987), Scheerens (1990), and Hopkins & Leask (1989);

(2) the studies on school effectiveness and instructional research, such as Wilson & Corcoran (1988), Mortimore (1993), Wang & Walberg (1991), Kyle (1985), and Brophy & Good (1986); and

(3) the studies on organizational effectiveness, such as Cameron & Whetten (1983).

## A Multi-level and Multi-indicator Framework

Based on the above theoretical consideration and literature support, the principal investigator developed a preliminary framework including multi-levels and multi-indicators to assess education quality in schools. In the light of the current trend of education indicator development, the framework was more concerned with process characteristics in schools and the selection of multi-indicators was based on the previous studies on education indicators, school effectiveness, instructional research,

organizational effectiveness, and school management. The collection of data was conducted at more than one aggregation level. It was hoped that the framework can be carried out in form of both school self evaluation and external evaluation and serves the purposes of both internal development and external accountability.

Specifically in this framework, education quality in school is defined by the following characteristics:

(1) it represents the overall performance of school members at the individual level, the group level, and the organizational level;
(2) it includes the affective, cognitive, and behavioral components of performance; and
(3) it can be indicated by the satisfaction, perception, and performance of the key school actors.

The proposed framework was rather comprehensive and the relevance, validity, and reliability of most selected indicators were supported by the research evidence in the past studies. This preliminary framework was further developed through the case studies and two surveys of the research project. The major indicators of the framework are illustrated as follows:

**Indicators at the Student Individual Level**:

a. Indicators of Student Attitudes: They are the levels of positive attitudes put towards self, peers, teachers, the school, and learning. These indicators were developed and tested in this project.

- Self concept
- Attitude to peers
- Attitude to teachers
- Attitude to the school
- Attitude to learning
- Attitude Index (=(self+peers+teachers+school+learning)/5)

b. Student Satisfactions: They are the extents to which the student is satisfied with different aspects of school life; They were developed from the literature of quality of work life and organizational behavior (Cammann, et al., 1983; Oldham & Hackman, 1981).

- Social satisfaction (i.e. with social relations in school)
- Intrinsic satisfaction (i.e. with opportunities to perform & learn)
- Extrinsic satisfaction (i.e. with school arrangements)
- Overall satisfaction (i.e. with the learning life in school )
- Satisfaction Index (=(social+intrinsic+extrinsic+overall)/4)

c. Negative Feelings: They are negative indicators of student feelings about learning and the school; They were developed in this education quality research project:

- Feeling of homework overload (-)
- Intention to dropout (-)

d. Attainment Test Results: They are academic indicators got from the results of the Hong Kong public tests --Attainment Tests on the following subjects:

- Chinese
- English
- Mathematics

**Indicators at the Classroom Level**:

a. Indicators of Classroom Climate: They are indicators of social climate among students and between students and teacher in classroom; They were adapted from Moos & Tricketts (1974) and had been used widely in different areas and countries, including the following nine indicators:

<among students>

- Affiliation (i.e. the level of friendship students feel for each other)
- Order and Organization (i.e. the level of students behaving in an orderly and polite manner and classroom activities being well organized )
- Competition (i.e. the level of students competing on academic achievement/recognition)
- Involvement (i.e. the level of students having attentive interest in class activities).

<students-teacher>

- Teacher support (i.e. the amount of teachers' help and concern provided to the students).
- Rule clarity (i.e. the level of teachers demanding on establishing a set of clear rules and being consistent in dealing with students who break rules )
- Task orientation (i.e. the level of teachers completing planned classroom activity).
- Teacher control (i.e. the level of teachers strictly implementing the classroom rules).
- Innovation (i.e. the level of teachers being innovative on teaching methodology).

b. Indicator of Quality of Classroom Physical Environment: This is an overall quality indicator of classroom physical environment in terms of facilities, space, arrangements, neatness, cleanliness, and comfort, perceived by students or teachers; The indicator was developed in this education quality project.

c. Indicators of Classroom Management: They are the types of power base the class master uses to influence students' compliance in classroom, perceived by students; They were developed and adapted from French and Raven (1968) and Ho (1989) and had been used and tested in this project.

- Professional power (i.e. based on professional knowledge and skills)
- Position power (i.e. based on school regulations or teacher position)
- Reward power (i.e. based on providing rewards)

- Coercive power (-) (i.e. based on exercising punishment)
- Personal power (i.e. based on class master's personality and charisma)

d. Indicators of Classroom Arrangements: They were developed in the education quality project, including:

- Insufficient recess time (-) (i.e. for students' to have a break or go to toilet)
- Ignorance of art, physical education, and music(-) (i.e. replaced by academic subjects )
- Appropriateness of class size (perceived by teachers)
- % time for teaching activities (perceived by teachers)
- % time for student behavior problems (-) (perceived by teachers)

**Indicators at the Teacher Individual Level**

a. Indicators of Job Satisfaction: They were adapted from the literature of quality of work life (Cammann, et al., 1983; Oldham & Hackman, 1981):

- Social satisfaction (i.e. with the social relationship with colleagues)
- Extrinsic satisfaction (i.e. with the salary or benefits provided )
- Intrinsic satisfaction (i.e. with the opportunities to develop and learn)
- Influence satisfaction (i.e. with the opportunities to participate in decision-making and be autonomous)

b. Indicators of Job Attitudes/Feelings: They were adapted from the literature of quality of work life (Cammann, et al., 1983):

- Commitment to the job ( i.e. the level of being committed to the job)
- Job challenge (i.e. the level of feeling challenges in teaching job)
- Job meaning (i.e. the level of feeling that teaching job is meaningful)
- Job responsibility (i.e. the level of feeling responsibility in the job)
- Self-report of effort (i.e. the level of effort put into the job reported by self)

c. Indicators of Teaching Efficacy: They were adapted from Gibson & Dembo (1984), Matthes, Tollerud, & Langeveldt (1989), and Woolfolk & Hoy (1990):

- Personal efficacy (i.e. the belief that personal effort in teaching can improve student learning)
- General efficacy (i.e. the belief that teaching can improve student learning even under the disadvantages from students' families)
- Teaching efficacy ( =personal + general)

**At Teacher Group Level:**

a. Indicators of Social Norms: They are indicators of the social relationship or group feelings among teachers; They were adapted from Halpin (1966) and Halpin & Croft (1963) and had been used widely in different studies ( Cheng,1991; 1993c):

- Intimacy (i.e. the close social relationship among teachers)
- Esprit (i.e. the working morale of teachers)
- Disengagement (-) (i.e. the level of teachers being disengaged from the school)
- Hindrance (-) (i.e. feeling of being burdened with unnecessary work)

b. Indicator of Teacher Professionalism: This is the tendency of teachers being committed to the professional code; It was developed and used in Cheng (1992b).

c. Indicator of Quality of Physical Environment of Staff Room: This is an overall quality indicator of staff room physical environment in terms of facilities, space, arrangements, neatness, cleanliness, and comfortability, perceived by teachers; It was developed in this education quality research project.

**Indicators at the Organizational Level**:

a. Strength of Organizational Culture : It is the strength of sharing values, beliefs, and assumption about school mission, teaching, learning, and management among school members; Based on the idea of Alvesson (1987) and Price and Mueller (1986), it was developed and tested in Cheng (1993c).

b. Indicators of Organizational Structure: They were adapted and developed Oldham & Hackman (1981) and Hage & Aiken (1967) and had been used in Cheng (1993c):

- Formalization (i.e. the level of school functioning being formalized with clear written policies, procedures, and records)
- Hierarchy of Authority (-) (i.e the level of decision-making being centralized in school)
- Participation (i.e the level of teachers participating in decision-making and planning)

c. Indicator of Organizational Effectiveness : This indicator measures the level of effectiveness of school functioning in terms of productivity, adaptability, and flexibility as perceived by teachers; It was adapted from Mott (1972) and had been used in different studies (Cheng, 1991c, 1993c).

d. Indicator of Quality of School Physical Environment: This is an overall indicator of quality of school physical environment in terms of facilities, space arrangements, neatness, being planted, cleanliness, and comfort, as perceived by students or teachers; It was developed in the education quality research project.

e. Indicator of Principal-teachers Relationship : The indicator describes the degree of satisfaction with the social and working relationship between principal-teachers, perceived by teachers; It was developed in the Chan, Cheng, & Hau (1991).

f. Indicators of Principal's Leadership: Based on Bolman & Deal (1991) and Sergiovanni (1984), they were developed and used in this project.

- Human Leadership (i.e. the extent to which the principal is supportive and fosters participation)
- Structural Leadership (i.e. the extent to which the principal thinks clearly and logically, develops clear goals and policies, and holds people accountable for results)
- Political Leadership (i.e. the extent to which the principal is persuasive and effective at building alliances and support and solving conflicts)
- Symbolic Leadership (i.e. the extent to which the principal is inspirational and charismatic)
- Educational Leadership (i.e. the extent to which the principal emphasizes and encourages professional development and teaching improvement)

g. Indicator of School Improvement Need: This indicator assesses the need for improvement in 15 aspects of school functioning such as parental support, quality of student input, instructional resources, physical environment and facilities, staff professional development, morale, student performance, decision participation, teacher appraisal, and administrative procedures and management; The indicator was developed in a school management reform research project ( Cheng, 1992a).

The psychometric properties of the above indicators have been tested and documented in the past studies or pilot studies, as shown in Table 1.1.

**School Contextual Indicators**

In addition to the above indicators, there are also some indicators about the demographic characteristics of principals, teachers, students, the school and the community, the school's administrative structure, financial management, personnel administration, curriculum and instruction, extra-curricular activities, external relations, discipline and regulations, and communications. Since most of the Hong Kong schools are aided schools, they were established and operated on the basis of the Codes of Aid issued by the Education Department of the Hong Kong Government. The sample of schools were relatively homogeneous in input quality in terms of salary structure, professional qualification of teachers and administrators, promotion structure, teacher-class ratios, school facilities, formal curricula to be completed, public examination system, supporting personnel (such as technical, clerical, cleaning staff), formal opportunities of professional training and development, and supervision by the Hong Kong Education Department (Education Ordinance, 1972). Therefore, the framework of education quality developed in this study did not emphasize the quality of input that is often standardized in Hong Kong schools, but it was more concerned with the quality of process and outcome.

**Table 1.1 Psychometric Properties of Education Quality Indicators**

| INSTRUMENT | SOURCE | No. of cases in present study | No. of Items | No. of response categories | Estimated reliability by present study* |
|---|---|---|---|---|---|
| **Student attitudes** | | | | | |
| Self concept | Developed in this project | 11532 | 9 | 5 | 0.7219 |
| Attitude to peers | -- ditto -- | 11670 | 5 | 5 | 0.7547 |
| Attitude to schools | -- ditto -- | 11589 | 6 | 5 | 0.7258 |
| Attitude to teachers | -- ditto -- | 11536 | 5 | 5 | 0.7898 |
| Attitude to learn | -- ditto -- | 11157 | 10 | 5 | 0.7679 |
| **Student satisfactions** | | | | | |
| Social satisfaction | Cammann, et at. (1983); Oldman & Hackman (1981) | 11296 | 3 | 5 | 0.7805 |
| Intrinsic satisfaction | -- ditto -- | 11218 | 3 | 5 | 0.6219 |
| Extrinsic satisfaction | -- ditto -- | 11219 | 3 | 5 | 0.7637 |
| Overall satisfaction | -- ditto -- | - | 1 | 5 | - |
| **Negative feelings** | | | | | |
| Feeling of homework overload (-) | Developed in this project | - | 1 | 5 | - |
| Intention to dropout (-) | -- ditto -- | - | 1 | 5 | - |
| **Classroom climate (among students)** | | | | | |
| Affiliation | Moos & Tricket (1974) | 11106 | 4 | 5 | 0.7245 |
| Order and organisation | -- ditto -- | 10897 | 4 | 5 | 0.7216 |
| Competition | -- ditto -- | 11034 | 4 | 5 | 0.2095 |
| Involvement | -- ditto -- | 10944 | 4 | 5 | 0.6895 |
| **Classroom climate (students-teachers)** | | | | | |
| Teacher support | -- ditto -- | 11336 | 4 | 5 | 0.7948 |
| Rule clarity | -- ditto -- | 11311 | 5 | 5 | 0.520 |
| Task orientation | -- ditto -- | 11447 | 3 | 5 | 0.5960 |
| Teacher control | -- ditto -- | 11328 | 3 | 5 | 0.5427 |
| Innovation | -- ditto -- | 11208 | 5 | 5 | 0.756 |
| **Quality of classroom physical environment** | | | | | |
| Classroom Quality (perceived by students) | Developed in this project | 11398 | 11 | 5 | 0.7814 |
| Classroom Quality (perceived by teachers) | -- ditto -- | 1797 | 11 | 5 | 0.8012 |

* The instruments were tested by the reliability analysis based on the second survey (1993-1994)

| INSTRUMENT | SOURCE | No. of cases in present study | No. of Items | No. of response cate-gories | Estimated reliability by present study* |
|---|---|---|---|---|---|
| **Power bases of class master** | | | | | |
| Professional Power | French and Raven (1968); Ho (1989) | 11395 | 3 | 5 | 0.7326 |
| Position Power | -- ditto -- | 11357 | 3 | 5 | 0.7933 |
| Reward Power | -- ditto -- | 11294 | 3 | 5 | 0.6815 |
| Coercive Power | -- ditto -- | 11293 | 3 | 5 | 0.7951 |
| Personal Power | -- ditto -- | 11267 | 3 | 5 | 0.7255 |
| **Classroom arrangements** | | | | | |
| Insufficient of recess time (-) | Developed in this project | - | 1 | 5 | - |
| Ignorance of art, PE and music (-) | -- ditto -- | - | 1 | 5 | - |
| Appropriateness of class size | -- ditto -- | - | 1 | 5 | - |
| % time for teaching activities | -- ditto -- | - | 1 | 5 | - |
| % time for student behavior (-) | -- ditto -- | - | 1 | 5 | - |
| **Job satisfaction** | | | | | |
| Social satisfaction | Cammann, et at. (1983); Oldman & Hackman (1981) | 1790 | 3 | 7 | 0.8425 |
| Extrinsic satisfaction | -- ditto -- | 1711 | 3 | 7 | 0.5854 |
| Intrinsic satisfaction | -- ditto -- | 1780 | 3 | 7 | 0.7318 |
| Influence satisfaction | -- ditto -- | 1788 | 2 | 7 | 0.6186 |
| **Job attitude/feelings** | | | | | |
| Commitment to job | Cammann, et at. (1983) | 1829 | 2 | 7 | 0.8170 |
| Job challenge | -- ditto -- | 1812 | 3 | 7 | 0.4559 |
| Job meaning | -- ditto -- | 1816 | 3 | 7 | 0.6524 |
| Job responsibility | -- ditto -- | 1823 | 2 | 7 | 0.7846 |
| Self-report of effort | -- ditto -- | - | 1 | 7 | - |
| **Teaching Efficacy** | | | | | |
| Personal efficacy | Gibson & Dembo (1984); Matthes, Tollerud & Langeveldt (1989); Woolfolk & Hoy (1990) | 1528 | 8 | 5 | 0.6981 |
| General efficacy | -- ditto -- | 1528 | 6 | 5 | 0.5706 |

* The instruments were tested by the reliability analysis based on the second survey (1993-1994)

| INSTRUMENT | SOURCE | No. of cases in present study | No. of Items | No. of response cate-gories | Estimated reliability by present study* |
|---|---|---|---|---|---|
| **Social norms** | | | | | |
| Intimacy | Halpin & Croft (1963) | 1771 | 6 | 7 | 0.7864 |
| Esprit | -- ditto -- | 1831 | 5 | 7 | 0.8058 |
| Disengagement (-) | -- ditto -- | 1827 | 5 | 7 | 0.7580 |
| Hindrance (-) | -- ditto -- | 1822 | 5 | 7 | 0.6886 |
| **Professionalism** | Cheng (1992b) | 1807 | 17 | 7 | 0.9472 |
| **Staff room quality** | Developed in this project | 1804 | 7 | 5 | 0.7274 |
| **Organisational Culture** | Cheng (1993c) | 1528 | 10 | 5 | 0.8498 |
| **Organisational Structure** | | | | | |
| Fomalization | Oldman & Hackman (1981); Hage & Aiken (1967) | 1824 | 4 | 7 | 0.6772 |
| Hierarchy of authority (-) | -- ditto -- | 1839 | 2 | 7 | 0.7452 |
| Participation | -- ditto -- | 1828 | 4 | 7 | 0.7414 |
| **Organizational effectiveness** | Mott (1972) | 1524 | 8 | 5 | 0.8345 |
| **Quality of school physical environment** | | | | | |
| School quality (S) | Developed in this project | 11605 | 8 | 5 | 0.7945 |
| School quality (T) | -- ditto -- | 1791 | 8 | 5 | 0.7849 |
| **Parent-teachers relationship** | Chan, Cheng, & Hau (1991) | 1417 | 10 | 7 | 0.9478 |
| **Principal's leadership** | | | | | |
| Human leadership | Developed in this project | 1764 | 7 | 7 | 0.9373 |
| Structural leadership | -- ditto -- | 1752 | 7 | 7 | 0.9178 |
| Political leadership | -- ditto -- | 1769 | 6 | 7 | 0.9250 |
| Symbolic leadership | -- ditto -- | 1763 | 6 | 7 | 0.8884 |
| Educational leadership | -- ditto -- | 1762 | 5 | 7 | 0.8775 |
| **Need for school improvement (-)** | Cheng (1992a) | 1794 | 15 | 7 | 0.9247 |

* The instruments were tested by the reliability analysis based on the second survey (1993-1994)

## Research Methodology

This project includes two parts: the pilot study ( supported by the Chinese University funding, 1990-91) and the main study ( supported by the Earmarked Research Grants of the Research Grants Council, 1992-1995). In the final analysis, the data of these two parts had been combined and used to develop and test the framework of education quality indicators and to investigate organizational determinants.

**Pilot Study** ( 1990-1991)

A pilot study had been conducted for this project from September 1990 to July 1991. It was sponsored by the strategic research funding (/Direct Grant for Research/ Account No. 2202-00680) of the Administrative, Business, and Social Studies Panel CUHK. In this study, four case studies (mainly interviews and observations) and a sample survey of 58 Hong Kong primary schools of the same school sponsoring body "D1" involving 58 principals, 1,276 teachers, 232 classrooms, and 8,120 students were conducted to explore and further develop the above preliminary framework of education quality indicators proposed from the literature review and initial conception of the research. A set of 6 questionnaires ( 1 for principal, 3 for teachers, and 2 for students) had been developed. Some important indicators (e.g. leadership indicators, student attitudes indicators, quality of physical environment in school or classroom, etc.) were developed and validated in this pilot study. Some potential relationships between administrative and organizational factors and quality of education were observed and analyzed. The preliminary findings supported the significance and feasibility of development of education indicators and investigation of organizational influence on quality of education in Hong Kong primary schools. Also, the pilot study yielded some critical implications for establishing conceptual model of indicators, selecting and operationalizing indicators, anticipating difficulties in research, and planning the methodologies for this project.

**Main Study**

The main study included two major surveys and several case studies in a period from September 1992 to August 1995.

a) <u>The First Major Survey</u> ( 1992):

Based on the findings of the pilot study of schools of sponsoring body D1, the questionnaires had been slightly revised for the first major survey. With the help of the school sponsoring bodies D2, D3, and D4, the first major survey was carried out from February to July 1992. Including those schools of D1 in the pilot study, approximately 190 primary schools (nearly 17 % of the primary school population), 678 classrooms, 3,872 teachers, and 21,622 students had been involved in this project. Due to the missing data, the number of schools involved in the analysis ranged from 150-173. Since these four school sponsoring bodies D1, D2, D3 and D4 are the largest sponsoring bodies, their schools have various contextual background, geographical location, and school size and type. Within each sampled school, in addition to the principal, nearly all teachers and Grade 6 students were sampled to

complete the questionnaires. In order to maximize the variety of variables (i.e. number of different indicators), cut down the time for completing the questionnaires, and minimize response set, the teachers and students in each school were divided into 3 and 2 groups respectively and each group completed different sets of questionnaires.

b) The Second Major Survey ( 1993, 1994 ):

From the findings of the first major survey and in-depth case studies, the framework of education indicators was further refined; some indicators were adapted added; and some new indicators were added. The set of questionnaires were correspondingly adapted, refined, and used in the second major survey. There were three sets of questionnaires for teachers and students respectively. The method and procedures of the 2nd survey were similar as in the first survey except the sampling method of primary schools. In addition to the previous four school sponsoring bodies ( D1, D2, D3, & D4), another important school sponsoring body D5 agreed to participate in the second survey. Also, a sample of 94 primary schools were randomly selected from the primary school population with stratification by school districts in Hong Kong. This random sample included some schools of the school sponsoring bodies D1, D2, D3, D4, & D5 and other schools, that were randomly selected from different school district. The education quality profile of schools of each school sponsoring body ( D1 to D4) mapped by the indicator framework was used to test the stability of the framework between the first and second surveys (i.e. around a two-year period). The data of the random sample were used to provide an overall norm of education quality in Hong Kong primary schools and to analyze the organizational determinants of education quality. The data collection from schools of D1 was in mid 1993 and that from schools of other school sponsoring bodies and the random sample was mainly between January and July 1994. The numbers of schools, teachers, and students sampled in these two surveys were summarized in Table 1.2.

**Table 2 Numbers of Schools, Teachers, and Students Sampled in the Surveys**

| School sponsoring body | D1 | | D2 | | D3 | | D4 | | D5 | Random Sample |
|---|---|---|---|---|---|---|---|---|---|---|
| | '92* | '94* | '92 | '94 | '92 | '94 | '92 | '94 | '94 | '94 |
| Schools | 63 | 57 | 59 | 75 | 38 | 31 | 18 | 17 | 23 | 94 |
| Principals | 59 | 57 | 53 | 75 | 35 | 30 | 16 | 17 | 23 | 90 |
| Teachers | 1473 | 1407 | 1321 | 1831 | 678 | 788 | 38 | 354 | 614 | 2117 |
| Classes | 232 | 213 | 220 | 280 | 136 | 123 | 62 | 58 | 90 | 280 |
| Students | 7573 | 7301 | 7394 | 10432 | 4458 | 2864 | 1937 | 2241 | 3508 | 13520 |

* '92 represents the first survey conducted in 1991 to 1992, and '94 represents the second survey conducted in 1993 to 1994.

c) Case Studies ( 1994,1995)

In addition to the surveys, case studies were conducted to investigate the following questions:

1. whether the system of education indicators and the profiles developed from the survey are valid in these cases; what problems exist and how they can be adapted;
2. how administrative and organizational factors and processes contribute to quality of education in these schools; (the findings can be used to test the cross-sectional relationship obtained in the survey);
3. how education quality in schools can be developed and ensured ( considerable attention is given to the manipulable factors);
4. whether/how an interpretative framework can be developed to explain the interrelationships between indicators at different levels.

*Case Studies After the First Survey.* After the first major survey, 10 schools were identified as "quality" schools from the survey findings and selected for case study with focus on school environment and all important school activities and arrangements that are important to students' quality of school life and learning by using the video technology. The study was conducted in the 10 schools from January to July 1994 in parallel with the principal investigator's another research project entitled "International School Effectiveness Research Project: The Case of Hong Kong". The data were video-taped and analyzed, including the different aspects of school's physical environment, institutional / structural environment, social environment, and cultural environment. Physical environment refers to the external physical factors (such as the community facilities, pollution, surrounding spaces, interruptions, etc.) and the internal physical factors (such as the appearance, space, and accommodation of the school building, various facilities, lighting, classroom arrangements, staff rooms, stores, hygienic arrangements and conditions, etc.). Institutional environment refers to the factors relating to safety arrangements, transport arrangements, recess and assembly arrangements, prefect system, assessment and monitoring systems, discipline, guidance and counseling, and extra-activities arrangements, etc. Social environment refers to the activities of parents-school interactions and communication, students-teachers interactions, teacher-teacher interactions and cooperation, various social activities, and teachers-principal interactions, etc. Cultural environment refers to the symbols of the school, school ritual activities, expressions of school mission and goals, arrangements of assemblies, activities of moral and civic education, etc. The findings of these case studies had made contribution to answering above questions 1 and 2 and improving the framework of education quality indicators for the secondary major survey.

*Case Studies after the Second Survey.* In order to deepen the understanding the complex nature of education quality and answer the above four questions particularly questions 3 and 4, two outlier schools were chosen for in-depth case study. These outlier schools, one high quality school (or effective school) and one low quality school ( or ineffective school), were identified from the findings of the second major survey. The quality criteria for identifying these schools were (1) student's attitudes in school (including self concept, attitudes to school, teachers, peers, and learning); (2) student's satisfactions in school ( including intrinsic satisfaction, extrinsic satisfaction, social satisfaction, and overall satisfaction); and (3) student's academic achievements in the public examination ( including Chinese language, English language, and mathematics). To a great extent, these criteria may represent the cognitive, affective and behavior dimensions of students' educational outcomes. Based on these criteria, a

number of schools were identified as high quality schools and low quality schools. In order to minimize the difference in contextual factors and their potential influence in the comparison, only two schools (one effective school and one ineffective school ) with very similar demographic characteristics were chosen for outlier case studies. The case studies were conducted mainly in two stages: one in June of 1994 and the other in February and March of 1995. The sources of information for these case studies included school records, field observations, personal discussion, and questionnaire survey. The principal, all teachers, and all the grade 6 students in these two schools had been involved in the study. Also some key persons ( e.g. school managers, school council members, heads of other schools, district inspectors, etc. ) of the same school sponsoring body or the community who were familiar with the sampled schools had been contacted by the researcher to discuss, clarify, and validate some data and results of the study. The focus of the outlier case study was on the following aspects: (1) general characteristics of the schools; (2) student performance; (3) curriculum delivery; (4) classroom climate; (5) teacher satisfactions and attitudes; (6) staff relationship; (7) principal leadership; (8) parental influence; and (9) organizational characteristics. The study compared these aspects between the high quality school and low quality school and investigated how the quality of these aspects contribute to the effectiveness of school functioning and quality of students' educational performance. The findings of the case studies supplemented to the two surveys and helped to explain how education quality in schools can be developed and ensured and to explain the interrelationships between indicators at different levels. This part of study had been conducted in parallel with the "International School Effectiveness Research Project: The Case of Hong Kong".

## Limitations of the Study

The above study was mainly based on the information provided by the key actors in schools--principals, teachers, and students. Other important school constituencies such as parents, school management committees, the school sponsoring body, and the Education Department had not been surveyed. Of course, this sets one limitation to the findings of the study. Even though a rather comprehensive set of indicators at multiple levels including the individual/class levels of students, the individual/group levels of teachers, and the school organization level had been conceptualized and used to describe education quality of the sample schools, it does not mean all aspects of school process and education process had been included and studied in detail. For example, curriculum, teaching methods, staff development, community relations and services, school-home relations, etc. had not been investigated in detail. With the constraint of resources, inevitably every study has its limitations. The framework can be further developed in future in order to redress these limitations.

If we accept that education quality reflects the overall performance of school members at the individual level, the group level, and the organizational level including affective, cognitive, and behavioral components and can be indicated by the satisfaction, perception, and performance of students, teachers, and principals, the findings of this survey can provide us rather comprehensive

information to further develop the schools, administrators, teachers, and students. Particularly, since the framework of education quality and most of the education quality indicators have their roots in the research literature of school management, education effectiveness, and organizational studies, the framework developed in this project would have useful implications for school improvement and development for education quality.

## Conclusion

How to monitor and enhance education quality in schools is a major concern in current education reforms in different parts of the world. There may be many approaches to monitoring school education quality. In the light of the recent trend of education indicator development and the advances in school management, educational effectiveness, and educational administration, this research project has developed a framework including multi-levels and multi-indicators to assess education quality in schools. The developed framework is more concerned with process characteristics in schools and is supported by the research evidence from the past studies and the findings of surveys and case studies in this project. Since the framework is rather comprehensive covering a wide range of indicators on major characteristics of school processes (including most organizational determinants) and educational outcomes, it should be helpful to monitoring education quality and improving school effectiveness.

The developed framework and the established norms of education quality in Hong Kong primary schools provide a feasible and useful instrument that can serve the purposes of monitoring education quality in school for both internal development and external accountability. Furthermore, the development of framework is based on the research literature of education quality, school management, educational effectiveness, and organizational studies not only from the West but also from the East societies. Therefore it is hoped that the findings of this project can contribute to the growing public concern, policy discussion, research conceptualization, and practice on education quality and school development in both local and international contexts. In fact, the numerous papers, conference presentations, consultancy reports, seminars, talks, and workshops produced from this research project are making contribution in this direction.

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# Part II

# Summary of Findings

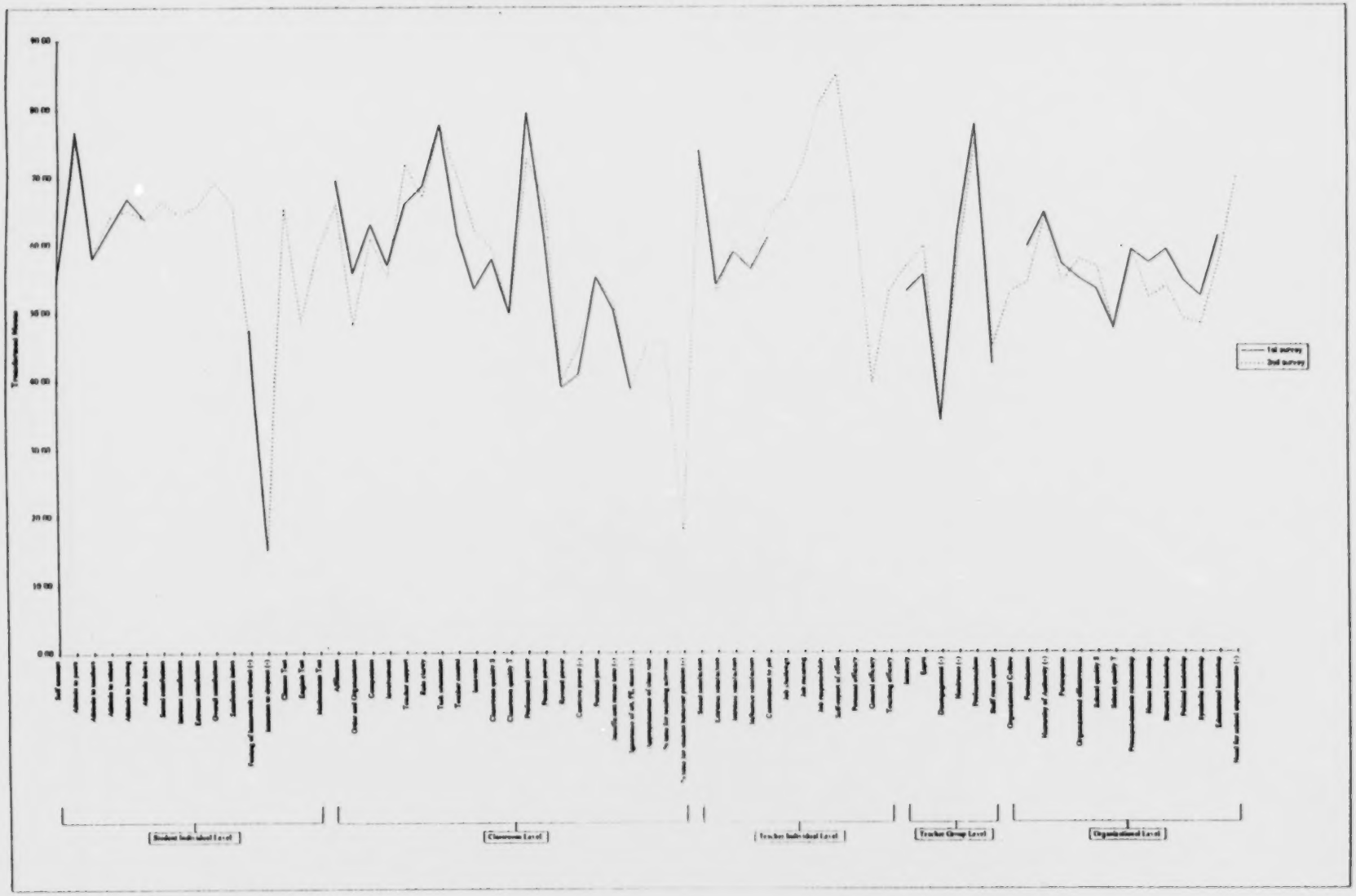
## 1. Identifying and Including Contextual Indicators into the Framework

In this study, there were approximately 62 school's contextual factors that could be potential indicators of education quality in schools. In order to identify which contextual factors are good indicators of education quality, ANOVA and correlational analysis were used to test how the major contextual factors are related to indicators of classroom process and students' learning performance. The analysis was based on the dataset of the random sample of schools. Finally, the following contextual factors were found to be potentially good indicators: sport ground (yes/no), library (yes/no), computer room (yes/no), number of students in school, student-teacher ratio, social worker service (yes/no), number of days of teacher absent for non-illness reasons, no. of teacher resigned (last year), school's academic banding, average number of students absent for non-illness reasons, mode of class streaming, teacher representative in school management committee's meeting, principal's position in school management committee's meetings, clear constitutions for the school management committee, availability of donation of schools, amount return to Education Department, number of teachers taking part in in-service training, frequency of teacher assessment, number of teacher still in working in school an hour before or after class, student participation in extra-curricular activities (compulsory for all or part), number of students' participation in extra-curricular activities, parent-teacher association, number of external awards, and frequency of moral education meeting. These contextual factors were therefore included in the framework of education quality indicators described in Part I.

## 2. Testing the Stability of the Framework of Education Quality Indicators

In order to testy the stability of the framework of education quality indicators, the education quality profiles ( in terms of group mean on each indicator) of each of 4 school sponsoring bodies (D1, D2, D3, D4) in the first survey (1991,92) and second survey (1993,94) were mapped and compared. Figure 2.1 gives an example of mapping and comparison of all schools of D1 to D4. (note: (1) All scores mostly based on 5-point scale or 7-point scale had been linearly transformed into a range from 0 to 100 with 50 as the neutral point such that the scores on different indicators can have the same scale in the mapped profile; (2) Since sponsoring body D5 had not been involved in the first survey, it was not included in this profile comparison across the two surveys; (3) The indicators on students' academic achievements and satisfactions were not in the first survey and therefore no comparisons could be done; (4) Only process and outcome indicators were included in the comparison because the aggregation is not appropriate for most of the contextual indicators). The findings of comparions, support the stability and consistency of the framework of education quality indicators developed in this research.

**Figure 2.1**
**The Stability of Education Quality Profiles of School Sponsoring Bodies D1-D4**





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## 3. The Education Quality Profiles of Hong Kong Primary Schools: The Norms

Based on the random sample of schools, the education quality profiles of Hong Kong primary schools were mapped by the following approaches:

- **By Means**: The transformed means (range from 0-100 with 50 as neutral point) of random sample on quality indicators of school process and outcome are used to plot the education profile, as shown in Figure 2.2 and Table 2.1. This profile can provide an overview of the comparative strengths and weaknesses of education quality in process and outcome of Hong Kong primary schools. In general, the higher score on a positive indicator represents the better quality on this aspect. For a negative indicator, the lower score indicates the better quality on this indicator. The score "50" in Figure 2.2 represents the conceptual mean of the indicator. The profile may serve as a norm for comparison with the profiles of individual schools or schools of a school sponsoring body.

- **By % of Schools in High, Satisfactory, and Low Performance**: The sampled schools were classified into high, satisfactory, and low performance on each quality indicators and the percentages of schools in these three categories on each indicator were plotted as in Figure 2.3a and 2.3b and listed in Tables 2.2a and 2.2b. (Please refer to the ends of the figures for the detail of the classification of performance). This percentage profile can provide an alternative overview to examine the comparative strengths and weaknesses of education quality of Hong Kong primary schools. For example, the higher percentages of schools on a positive indicator ( or the lower percentages of schools on a negative indicator ) represent the better quality of Hong Kong primary schools as a whole on this indicator. Individual schools can use their own school profiles to compare with this overall high, satisfactory, and low performance profile and then identify their strengths and weaknesses on different indicators. Similarly, each of school sponsoring bodies can do the same thing to identify the strengths and weaknesses of their affiliated schools on different indicators.

- **By Distribution of Schools**: According to the raw scores of schools on each indicator, the distribution of schools was plotted as a profile of the indicator. Some examples of these profiles of distribution are shown in Figures 2.4a and 2.4b. These profiles can provide another way to observe the achievements of schools on each indicator of education quality. Individual schools can use their own scores on one indicator (e.g. student's attitude index) to find out where they are in the distribution plot of this indicator (i.e. how good they are on this indicator when compared with other schools)

- **By Profiling Characteristics of Effective and Ineffective Schools**: In terms of the composite score of indices of students' attitudes, satisfactions, and academic achievements, a number of effective schools and ineffective schools were identified among all the schools involved in the second survey: schools with the composite sorce larger than 1.5 standard deviation as effective schools ( 13 schools ) and schools with the composite less than 1.5 standard deviation as ineffective schools ( 15 schools ). The profiles of these two types of schools were plotted by their means on each indicator of process or outcome, as shown in Figure 2.5 and Table 2.3. These two profiles are contrastingly different on most of education quality indicators. In general, the effective schools perform better than the Hong Kong norms and much better than ineffective schools on most process and outcome indicators. The profiles can provide a very illustrative description and pattern of the process characteristics of effective schools and ineffective schools that can be used for school development. Individual schools can use their school profiles to compare with these two typical profiles of effective schools and ineffective schools, find out their strengths and weaknesses in school process and plan their school development strategies.

**Figure 2.2**
**Education Quality Profile of Hong Kong Primary Schools: By Transformed Means**

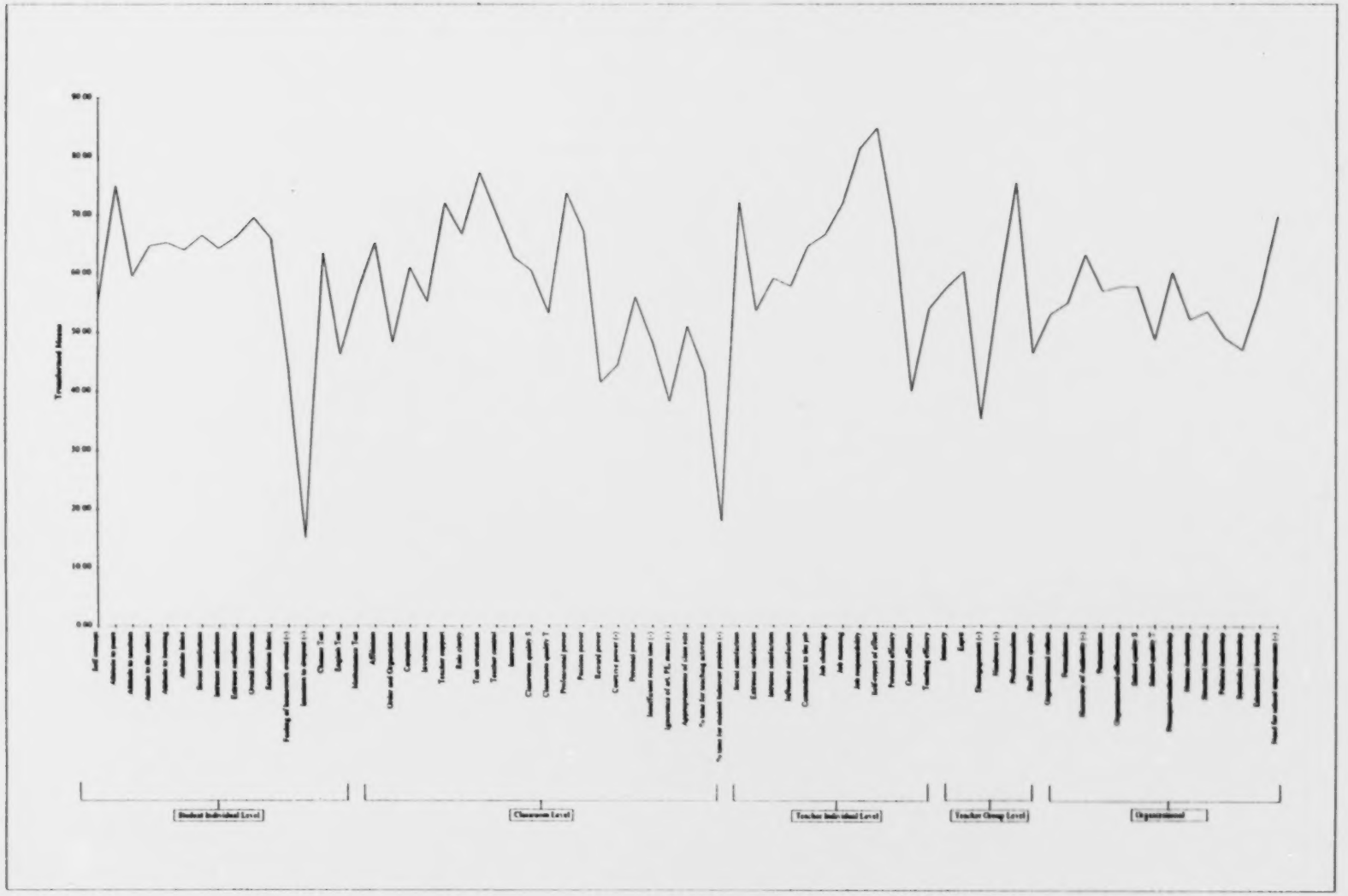



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**Table 2.1.**
**Education Quality Profile of Hong Kong Primary Schools:**
**By Transformed Means and Raw Means**

| Indicators | Raw Means | (Mid-point of scale) | Transformed Means |
|---|---|---|---|
| <Student attitudes> | | | |
| Self concept | 3.19 | (3) | 54.75 |
| Attitude to peers | 4.00 | (3) | 75 |
| Attitude to teachers | 3.38 | (3) | 59.5 |
| Attitude to the school | 3.59 | (3) | 64.75 |
| Attitude to learning | 3.61 | (3) | 65.25 |
| Attitude Index | 3.56 | (3) | 64 |
| <Student satisfaction in school> | | | |
| Social satisfaction | 3.66 | (3) | 66.5 |
| Intrinsic satisfaction | 3.57 | (3) | 64.25 |
| Extrinsic satisfaction | 3.65 | (3) | 66.25 |
| Overall satisfaction | 3.78 | (3) | 69.5 |
| Satisfaction Index | 3.64 | (3) | 66 |
| <Negative Feelings> | | | |
| Feeling of homework overload (-) | 2.77 | (3) | 44.25 |
| Intention to dropout (-) | 1.60 | (3) | 15 |
| <Attainment test results> | | | |
| Chinese | 63.47 | (65.10)# | 63.47 |
| English | 46.22 | (48.28)# | 46.22 |
| Mathematics | 21.57 | (22.13)# | 56.76 |
| <Classroom climate> | | | |
| Affiliation | 3.61 | (3) | 65.25 |
| Order and Organization | 2.93 | (3) | 48.25 |
| Competition | 3.44 | (3) | 61 |
| Involvement | 3.21 | (3) | 55.25 |
| Teacher support | 3.88 | (3) | 72 |
| Rule clarity | 3.67 | (3) | 66.75 |
| Task orientation | 4.09 | (3) | 77.25 |
| Teacher control | 3.80 | (3) | 70 |
| Innovation | 3.51 | (3) | 62.75 |
| <Quality of classroom physical environment> | | | |
| perceived by students | 3.42 | (3) | 60.5 |
| perceived by teachers | 3.13 | (3) | 53.25 |
| <Power bases of class master> | | | |
| Professional power | 3.95 | (3) | 73.75 |
| Position power | 3.69 | (3) | 67.25 |
| Reward power | 2.66 | (3) | 41.5 |
| Coercive power (-) | 2.78 | (3) | 44.5 |
| Personal power | 3.24 | (3) | 56 |
| <Classroom arrangements> | | | |
| Insufficient recess time (-) | 2.93 | (3) | 48.25 |
| Ignorance of art, PE and music (-) | 2.53 | (3) | 38.25 |
| Appropriateness of class size | 3.04 | (3) | 51 |
| % time for teaching activities | 2.73 | (3)## | 43.25 |

Note:
# The number in bracket shows the average score of Hong Kong primary six students
## 1, 2, 3, 4, 5 represents 0%, 25%, 50%, 75% and 100% of class time used for teaching activities respectively

| Indicators | Raw Means | (Mid-point of scale) | Transformed Means |
|---|---|---|---|
| % time for student behavior problem (-) | 1.72 | (3)### | 18 |
| <Job satisfaction> | | | |
| Social satisfaction | 5.33 | (4) | 72.17 |
| Extrinsic satisfaction | 4.22 | (4) | 53.67 |
| Intrinsic satisfaction | 4.55 | (4) | 59.17 |
| Influence satisfaction | 4.47 | (4) | 57.83 |
| <Job attitudes/feelings> | | | |
| Commitment to the job | 4.88 | (4) | 64.67 |
| Job challenge | 5.00 | (4) | 66.67 |
| Job meaning | 5.32 | (4) | 72 |
| Job responsibility | 5.88 | (4) | 81.33 |
| Self-report of effort | 6.09 | (4) | 84.83 |
| <Teaching efficacy> | | | |
| Personal efficacy | 3.71 | (3) | 67.75 |
| General efficacy | 2.60 | (3) | 40 |
| Teaching efficacy | 3.16 | (3) | 54 |
| <Social norms> | | | |
| Intimacy | 4.45 | (4) | 57.5 |
| Esprit | 4.62 | (4) | 60.33 |
| Disengagement (-) | 3.12 | (4) | 35.33 |
| Hindrance (-) | 4.42 | (4) | 57 |
| <Professionalism> | 5.53 | (4) | 75.5 |
| <Quality of staff room physical environment> perceived by teachers | 2.86 | (3) | 46.5 |
| <Strength of Organizational Culture> | 3.12 | (3) | 53 |
| <Organizational structure> | | | |
| Formalization | 4.30 | (4) | 55 |
| Hierarchy of authority (-) | 4.79 | (4) | 63.17 |
| Participation | 4.42 | (4) | 57 |
| <Organizational effectiveness> | 3.31 | (3) | 57.75 |
| <Quality of school physical environment> | | | |
| perceived by students | 3.31 | (3) | 57.75 |
| perceived by teachers | 2.95 | (3) | 48.75 |
| <Principal-teachers relationship> | 4.61 | (4) | 60.17 |
| <Principal's Leadership> | | | |
| Human leadership | 4.13 | (4) | 52.17 |
| Structural leadership | 4.21 | (4) | 53.5 |
| Political leadership | 3.94 | (4) | 49 |
| Symbolic leadership | 3.82 | (4) | 47 |
| Educational leadership | 4.37 | (4) | 56.17 |
| <Need for school improvements> | 5.19 | (4) | 69.83 |

Note:
### 1, 2, 3, 4, 5 represents 0%, 25%, 50%, 75% and 100% of class time used for student problems respectively

**Figure 2.3a**

**Profile of Process and Outcome Indicators of Hong Kong Primary Schools: By % of School in High, Satisfactory, and Low Performance**

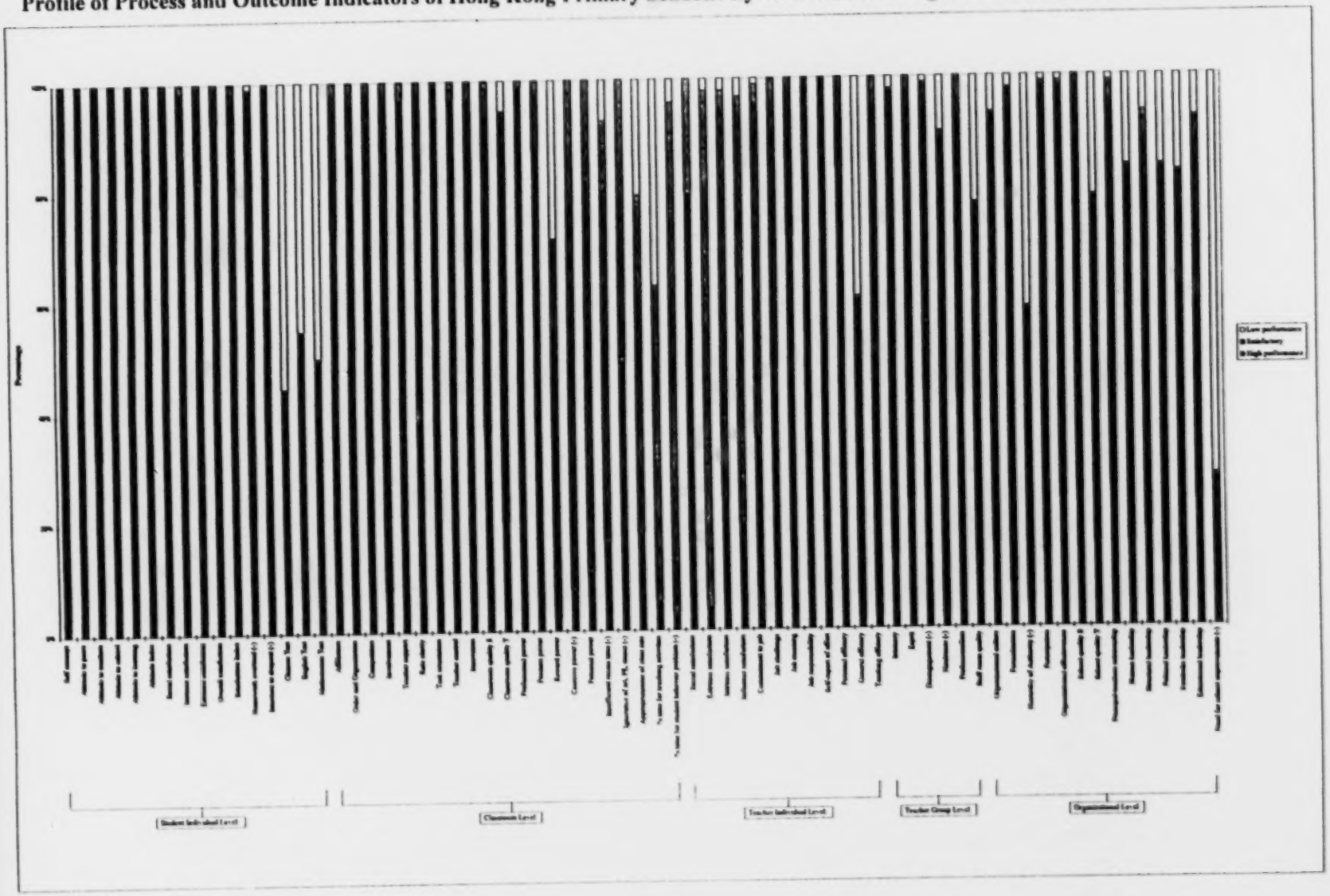


**Figure 2.3b**

**Profile of Contextual Indicators of Hong Kong Primary Schools: By % of School potentially in Positive Performance**

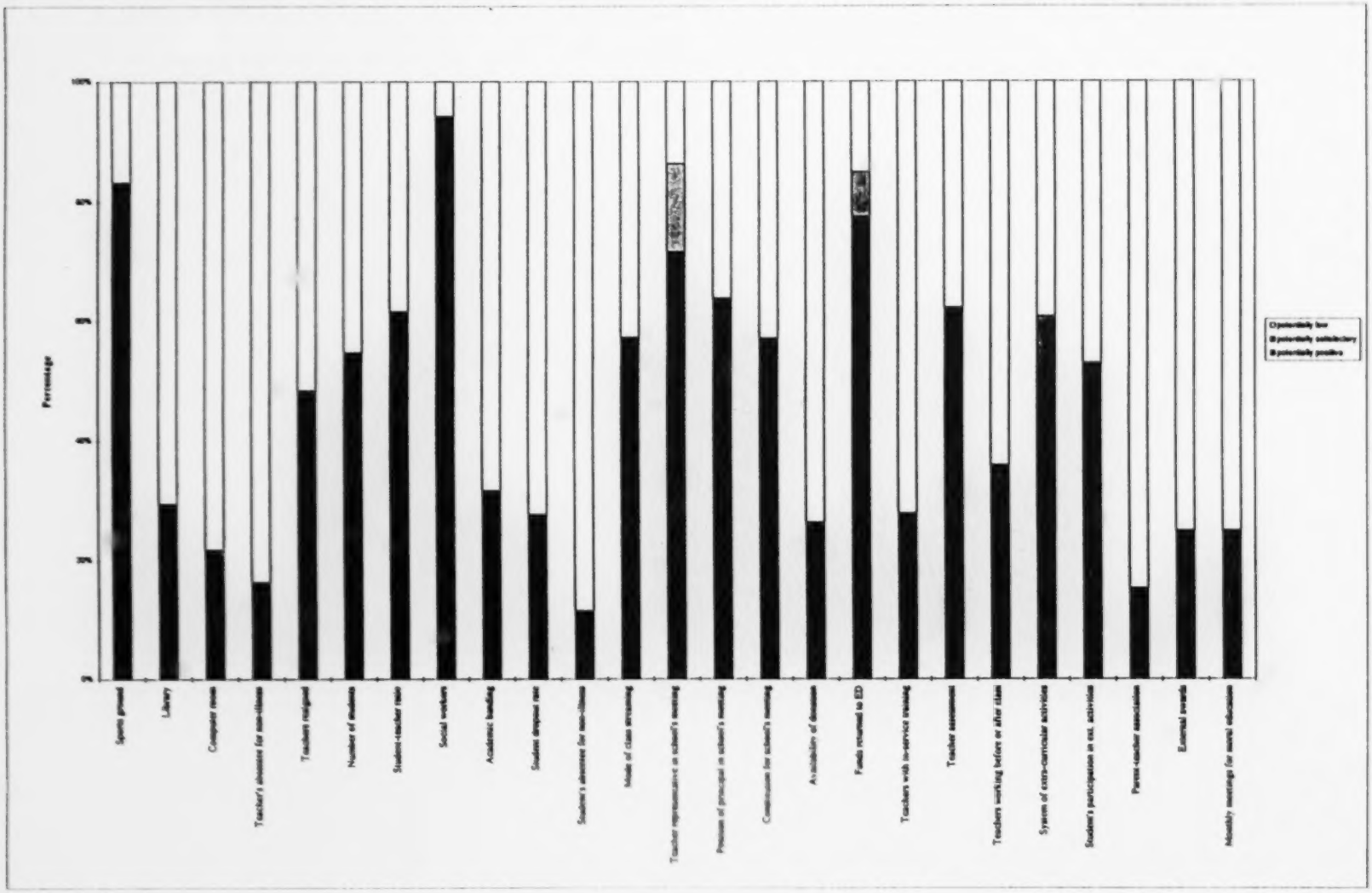


**Table 2.2a.**
**Profile of Process and Outcome Indicators of Hong Kong Primary Schools: By % of School in High, Satisfactory, and Low Performance**

| Indicators | Average School Means | (Mid-point) | High performance* ■ | Satisfactory performance* ▨ | Low performance* □ |
|---|---|---|---|---|---|
| <Student attitudes> | | | | | |
| Self concept | 3.19 | (3) | 1.1 | 98.9 | 0.0 |
| Attitude to peers | 4.00 | (3) | 100.0 | 0.0 | 0.0 |
| Attitude to teachers | 3.38 | (3) | 31.9 | 68.1 | 0.0 |
| Attitude to the school | 3.59 | (3) | 68.1 | 31.9 | 0.0 |
| Attitude to learning | 3.61 | (3) | 79.8 | 20.2 | 0.0 |
| Attitude Index | 3.56 | (3) | 73.4 | 26.6 | 0.0 |
| <Student satisfaction in school> | | | | | |
| Social satisfaction | 3.66 | (3) | 77.7 | 22.3 | 0.0 |
| Intrinsic satisfaction | 3.57 | (3) | 72.3 | 27.7 | 0.0 |
| Extrinsic satisfaction | 3.65 | (3) | 81.9 | 18.1 | 0.0 |
| Overall satisfaction | 3.78 | (3) | 92.6 | 7.4 | 0.0 |
| Satisfaction Index | 3.64 | (3) | 80.9 | 19.1 | 0.0 |
| <Negative Feelings> | | | | | |
| Feeling of homework overload (-) | 2.77 | (3) | 20.2 | 78.7 | 1.1 |
| Intention to dropout (-) | 1.60 | (3) | 100.0 | 0.0 | 0.0 |
| <Attainment test results> | | | | | |
| Chinese | 63.47 | (65.10)# | 55.6 | -- | 44.4 |
| English | 46.22 | (48.28)# | 45.1 | -- | 54.9 |
| Mathematics | 21.57 | (22.13)# | 50.0 | -- | 50.0 |
| <Classroom climate> | | | | | |
| Affiliation | 3.61 | (3) | 73.4 | 26.6 | 0.0 |
| Order and Organization | 2.93 | (3) | 0.0 | 100.0 | 0.0 |
| Competition | 3.44 | (3) | 30.9 | 69.1 | 0.0 |
| Involvement | 3.21 | (3) | 7.4 | 92.6 | 0.0 |
| Teacher support | 3.88 | (3) | 96.8 | 3.2 | 0.0 |
| Rule clarity | 3.67 | (3) | 83.0 | 17.0 | 0.0 |
| Task orientation | 4.09 | (3) | 100.0 | 0.0 | 0.0 |
| Teacher control | 3.80 | (3) | 96.8 | 3.2 | 0.0 |
| Innovation | 3.51 | (3) | 51.1 | 48.9 | 0.0 |
| <Quality of classroom physical environment> | | | | | |
| perceived by students | 3.42 | (3) | 36.2 | 63.8 | 0.0 |
| perceived by teachers | 3.13 | (3) | 19.8 | 74.7 | 5.5 |
| <Power bases of class master> | | | | | |
| Professional power | 3.95 | (3) | 98.9 | 1.1 | 0.0 |
| Position power | 3.69 | (3) | 87.2 | 12.8 | 0.0 |
| Reward power | 2.66 | (3) | 2.1 | 69.1 | 28.7 |
| Coercive power (-) | 2.78 | (3) | 7.4 | 92.6 | 0.0 |
| Personal power | 3.24 | (3) | 10.6 | 89.4 | 0.0 |

| Indicators | Average School Means | (Mid-point) | High performance* ■ | Satisfactory performance* ▨ | Low performance* □ |
|---|---|---|---|---|---|
| <Classroom arrangements> | | | | | |
| Insufficient recess time (-) | 2.93 | (3) | 16.0 | 76.6 | 7.4 |
| Ignorance of art, PE and music (-) | 2.53 | (3) | 0.0 | 51.1 | 48.9 |
| Appropriateness of class size | 3.04 | (3) | 17.6 | 61.5 | 20.9 |
| % time for teaching activities | 2.73 | (3)## | 5.5 | 57.1 | 37.4 |
| % time for student behavior problems (-) | 1.72 | (3)### | 3.2 | 95.6 | 4.4 |
| <Job satisfaction> | | | | | |
| Social satisfaction | 5.33 | (4) | 79.3 | 20.7 | 0.0 |
| Extrinsic satisfaction | 4.22 | (4) | 4.3 | 93.5 | 2.2 |
| Intrinsic satisfaction | 4.55 | (4) | 23.9 | 73.9 | 2.2 |
| Influence satisfaction | 4.47 | (4) | 19.6 | 77.2 | 3.3 |
| <Job attitudes/feelings> | | | | | |
| Commitment to the job | 4.88 | (4) | 35.2 | 63.7 | 1.1 |
| Job challenge | 5.00 | (4) | 47.3 | 52.7 | 0.0 |
| Job meaning | 5.32 | (4) | 71.4 | 28.6 | 0.0 |
| Job responsibility | 5.88 | (4) | 100.0 | 0.0 | 0.0 |
| Self-report of effort | 6.09 | (4) | 100.0 | 0.0 | 0.0 |
| <Teaching efficacy> | | | | | |
| Personal efficacy | 3.71 | (3) | 83.5 | 16.5 | 0.0 |
| General efficacy | 2.60 | (3) | 2.2 | 58.2 | 39.6 |
| Teaching efficacy | 3.16 | (3) | 2.2 | 97.8 | 0.0 |
| <Social Norms> | | | | | |
| Intimacy | 4.45 | (4) | 13.2 | 84.6 | 2.2 |
| Esprit | 4.62 | (4) | 23.1 | 76.9 | 0.0 |
| Disengagement (-) | 3.12 | (4) | 42.9 | 56.0 | 1.1 |
| Hindrance (-) | 4.42 | (4) | 2.2 | 87.9 | 9.9 |
| <Professionalism> | 5.53 | (4) | 41.8 | 58.2 | 0.0 |
| <Perceived quality of physical environment of staff room> | 2.86 | (3) | 10.9 | 66.3 | 22.8 |
| <Strength of Organizational Culture> | 3.12 | (3) | 15.4 | 78.0 | 6.6 |
| <Organizational structure> | | | | | |
| Formalization | 4.30 | (4) | 7.7 | 90.1 | 2.2 |
| Hierarchy of authority(-) | 4.79 | (4) | 4.4 | 53.8 | 41.8 |
| Participation | 4.42 | (4) | 13.2 | 85.7 | 1.1 |
| <Organizational effectiveness> | 3.31 | (3) | 23.1 | 75.8 | 1.1 |

| Indicators | Average School Means | (Mid-point) | High performance* ■ | Satisfactory performance* ▨ | Low performance* □ |
|---|---|---|---|---|---|
| <Quality of school physical environment> | | | | | |
| perceived by students | 3.31 | (3) | 24.5 | 75.5 | 0.0 |
| perceived by teachers | 2.95 | (3) | 15.2 | 63.0 | 21.7 |
| <Principal-teachers relationship> | 4.61 | (4) | 25.3 | 73.6 | 1.1 |
| <Principal's Leadership> | | | | | |
| Human Leadership | 4.13 | (4) | 15.2 | 68.5 | 16.3 |
| Structural Leadership | 4.21 | (4) | 17.6 | 75.8 | 6.6 |
| Political Leadership | 3.94 | (4) | 10.9 | 72.8 | 16.3 |
| Symbolic Leadership | 3.82 | (4) | 4.3 | 78.3 | 17.4 |
| Educational Leadership | 4.37 | (4) | 22.8 | 69.6 | 7.6 |
| <Need for school improvements> | 5.19 | (4) | 72.5 | 27.5 | 0.0 |

Note:

| | |
|---|---|
| # | The number in bracket shows the average score of Hong Kong primary six students |
| ## | 1, 2, 3, 4, 5 represents 0%, 25%, 50%, 75% and 100% of class time used for teaching activities respectively |
| ### | 1, 2, 3, 4, 5 represents 0%, 25%, 50%, 75% and 100% of class time used for student problems respectively |

*** For Five Point Scale (Positive Indicators)**

■ High performance is defined by the value of school mean larger than or equal to 3.5;

□ Low performance is defined by the value of school mean less than or equal to 2.5;

▨ Satisfactory performance is defined by the value between high performance and low performance.

*** For Seven Point Scale (Positive Indicators)**

■ High performance is defined by the value of school mean larger than or equal to 5;

□ Low performance is defined by the value of school mean less than or equal to 3;

▨ Satisfactory performance is defined by the value between high performance and low performance.

*** For Five Point Scale (Negative Indicators)**

■ High performance is defined by the value of school mean less than or equal to 2.5;

□ Low performance is defined by the value of school mean larger than or equal to 3.5;

▨ Satisfactory performance is defined by the value between high performance and low performance.

*** For Seven Point Scale (Negative Indicators)**

■ High performance is defined by the value of school mean less than or equal to 3;

□ Low performance is defined by the value of school mean larger than or equal to 5;

▨ Satisfactory performance is defined by the value between high performance and low performance.

## Table 2.2b.
## Profile of Contextual Indicators of Hong Kong Primary Schools: By % of School in Potentially Positive Performance

| | | Mean | Potentially Positive Performance* ■ | Potentially Satisfactory Performance* ▩ | Potentially Low Performance* □ |
|---|---|---|---|---|---|
| 1. | Sports ground | - | 83.3 | - | 16.7 |
| 2. | Library | - | 29.5 | - | 70.5 |
| 3. | Computer room | - | 21.8 | - | 78.2 |
| 4. | Teacher's absentee for non-illness (-) | 14.7 | 16.3 | - | 83.7 |
| 5. | Teachers resigned (-) | 1.76 | 48.3 | - | 51.7 |
| 6. | Number of students | 645.27 | 54.7 | - | 45.3 |
| 7. | Student-teacher ratio | 23.53 | 61.6 | - | 38.4 |
| 8. | Social workers | - | 94.3 | - | 5.7 |
| 9. | Academic banding (Range from 1 to 9) (-) | 4.02 | 31.7 | - | 68.3 |
| 10. | Student dropout rate (-) | 2.35 | 27.7 | - | 70.1 |
| 11. | Student's absentee for non-illness (-) | 3.19 | 11.5 | - | 88.5 |
| 12. | Mode of class streaming | - | 57.3 | - | 42.7 |
| 13. | Teacher representative in school's meeting | - | 71.6 | 14.8 | 13.6 |
| 14. | Position of principal in school's meeting | - | 68.8 | - | 36.3 |
| 15. | Constitutions for school's meeting | - | 57.1 | - | 42.9 |
| 16. | Availability of donation | - | 26.4 | - | 73.6 |
| 17. | Funds returned to ED (-) | - | 77.5 | 7.6 | 15.0 |
| 18. | Teachers with in-service training | 5.51 | 27.9 | - | 72.1 |
| 19. | Teacher assessment | - | 62.2 | - | 37.8 |
| 20. | Teachers working before or after class | 10.82 | 36.0 | - | 64.0 |
| 21. | System of extra-curricular activities | - | 25.0 | 35.7 | 39.3 |
| 22. | Students' participation in extra-curricular activities | 66.72 | 52.9 | - | 47.1 |
| 23. | Parent- teacher association | - | 15.3 | - | 84.7 |
| 24. | External awards | 17.84 | 25.0 | - | 75.0 |
| 25. | Monthly meetings for moral education | 5.40 | 25.0 | - | 75.0 |

* ■ Potentially positive performance of school outcome at student or teacher level
▩ Potentially satisfactory performance of school outcome at student or teacher level
□ Potentially low performance of school outcome at student or teacher level

For continuous variables,
Potentially positive performance is defined at above or equal to mean
Potentially low performance is defined at below mean

For categorical variables,
Potentially positive performance is defined by results of ANOVA analysis. For details, please refer to notes on the next page.

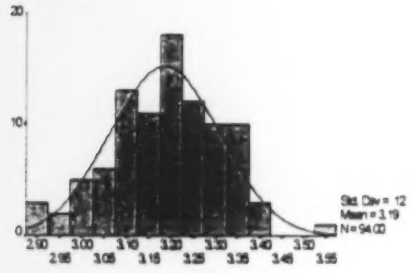
Note :

1. ■ if the school have sports ground
   □ if the school do not have sports ground
2. ■ if the school have library
   □ if the school do not have library
3. ■ if the school have computer room
   □ if the school do not have computer room
4. ■ if the number of days of teacher's absentee for non-illness is more than or equal to 15 days
   □ if the number of days of teacher's absentee for non-illness is less than 15 days
5. ■ if number of teacher resigned is more than or equal to 2
   □ if number of teacher resigned is less than 2
6. ■ if more than or equal to 646 students in the school
   □ if less than 646 students in the school
7. ■ if student-teacher ratio is more than or equal 23.53
   □ if student-teacher ratio is less than 23.53
8. ■ if there are social workers in school
   □ if three are no social workers in school
9. ■ if academic banding of P6 students in the year before the survey is higher than or equal to band 2
   □ if academic banding of P6 students in the year before the survey is lower than band 2
10. ■ if more than or equal to 2.35% students dropout
    □ if less than 2.35% students dropout
11. ■ if more than or equal to 3.19% students absent for non-illness
    □ if less than 3.19% students absent for non-illness
12. ■ if the class streaming are completely mixed
    □ if the class streaming are partially mixed
13. ■ if no teacher representative in school's committee meeting
    ▨ if there are teacher representatives (in attendance) in school's committee meeting
    □ if there are teacher representatives (present) in school's committee meeting
14. ■ if principal in attendance in school's committee meeting
    □ if principal present in school's committee meeting
15. ■ if constitutions for school's committee meeting is clear
    □ if constitutions for school's committee meeting is unclear
16. ■ if there are donation to the school
    □ if there are no donation to the school
17. ■ if less than $5000 returned to ED
    ▨ if $5001 to $15000 returned to ED
    □ if more than $15001 returned to ED
18. ■ if number of teacher taking part in in-service training is more than or equal to 6
    □ if number of teacher taking part in in-service training is less than 6
19. ■ if teacher assessment is put into practice regularly
    □ if teacher assessment is put into practice irregularly
20. ■ if more than or equal to 11 teachers have worked/still working in school an hour before or after class
    □ if less than 11 teachers have worked/still working in school an hour before or after class
21. ■ if students' participation in extra-curricular activities is free
    ▨ if students' participation in extra-curricular activities are compulsory
    □ if students' participation in extra-curricular activities are compulsory for part of the students
22. ■ more than or equal to 66.72% of students participate in extra-curricular activities
    □ less than 66.72% of students participate in extra-curricular activities
23. ■ if there are parent-teacher association
    □ if there are no parent-teacher association
24. ■ if more than or equal to 18 external awards attained each year
    □ if less than 18 external awards attained each year
25. ■ if number of meetings for moral education is greater than or equal to 5.5 times per month
    □ if number of meetings for moral education is less than 5.5 times per month

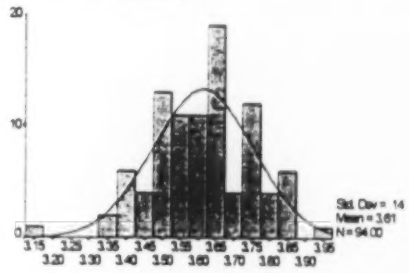
**Figure 2.4a.**
**Examples of Distribution of Hong Kong Primary Schools on Each Indicator of Process and Outcome**

( The x-axis represents the raw score of the indicators while, the y-axis represents frequency. )

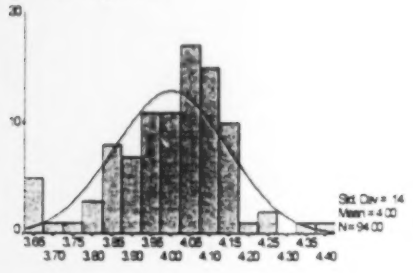
Self concept



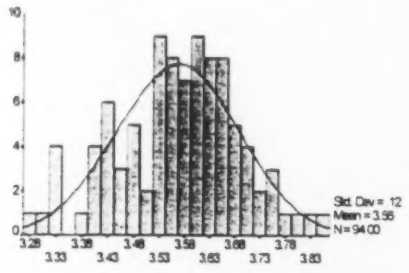
Attitude to learning



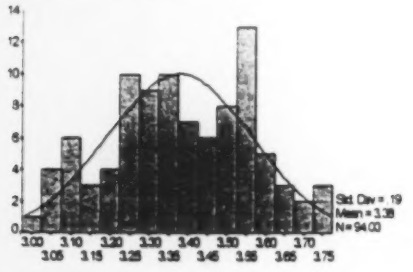
Attitude to peers



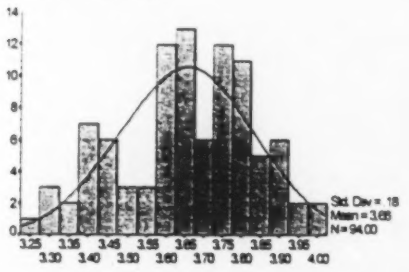
Attitude Index



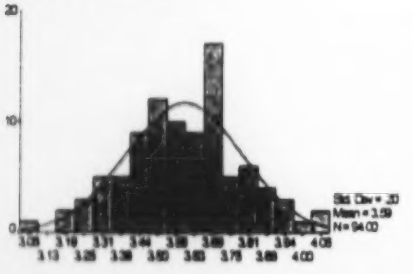
Attitude to teachers



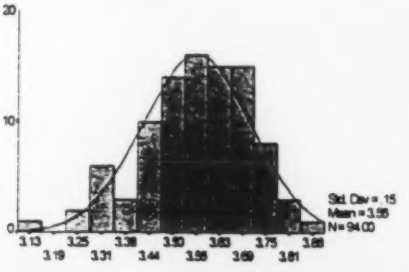
Social satisfaction



Attitude to the school



Intrinsic satisfaction





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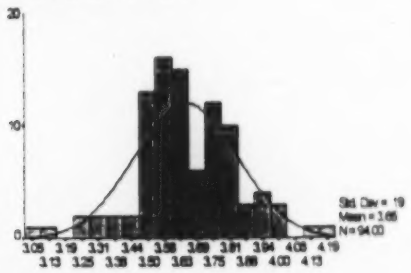
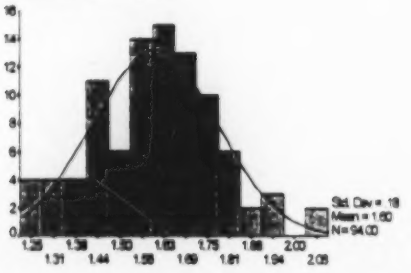
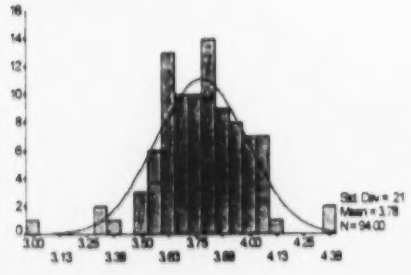
Extrinsic satisfaction



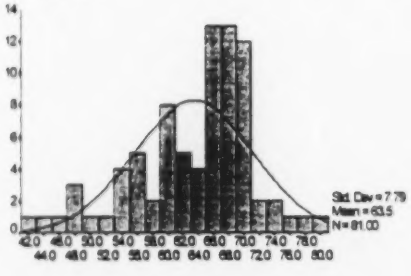
Intention to dropout



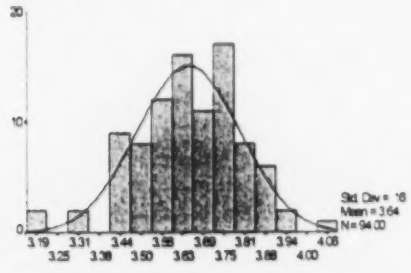
Overall satisfaction



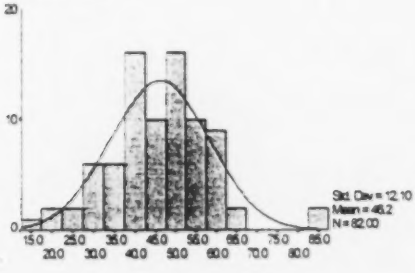
Chinese test



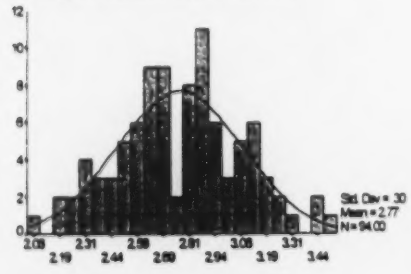
Satisfaction Index



English test



Feeling of homework overload



Mathematics test

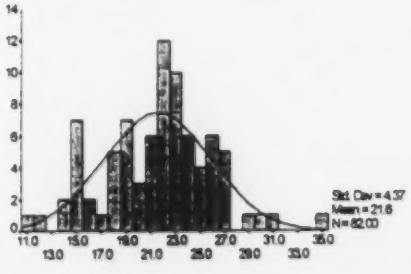
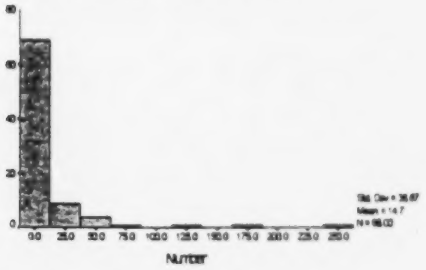


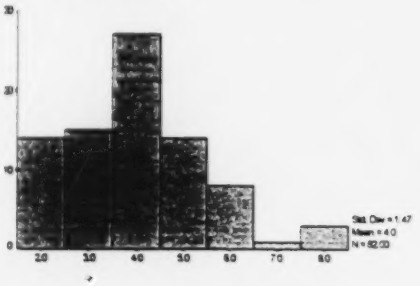
**Figure 2.4b.**
**Examples of Distribution of Hong Kong Primary Schools on Each Contextual Indicator**

( The x-axis represents the raw score of the indicators. )

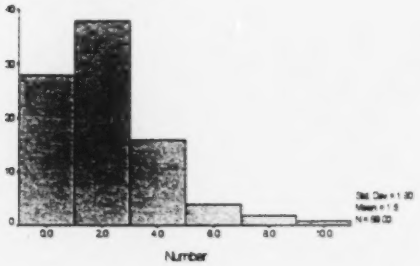
Teachers' absentee for non-illness



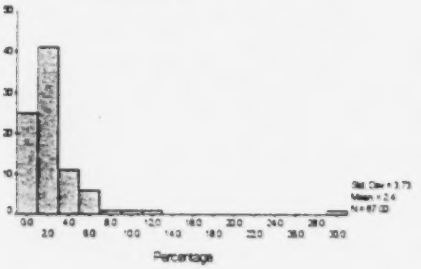

Academic banding



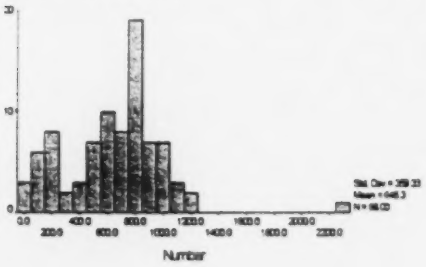
Teachers resigned



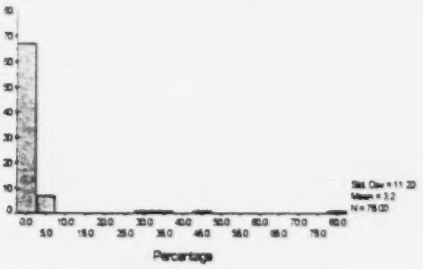

Student dropout rate



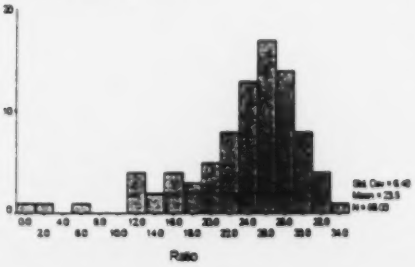

Number of students




Students' absentee for non-illness




Student-teacher ratio




Teachers with in-service training

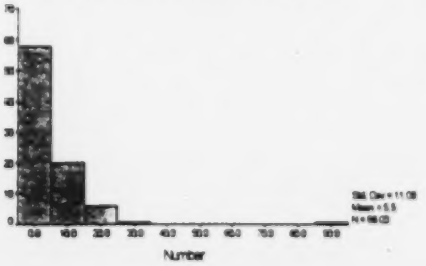




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**Figure 2.5**
**Characteristics of Effective and Ineffective Schools in Process and Outcome**

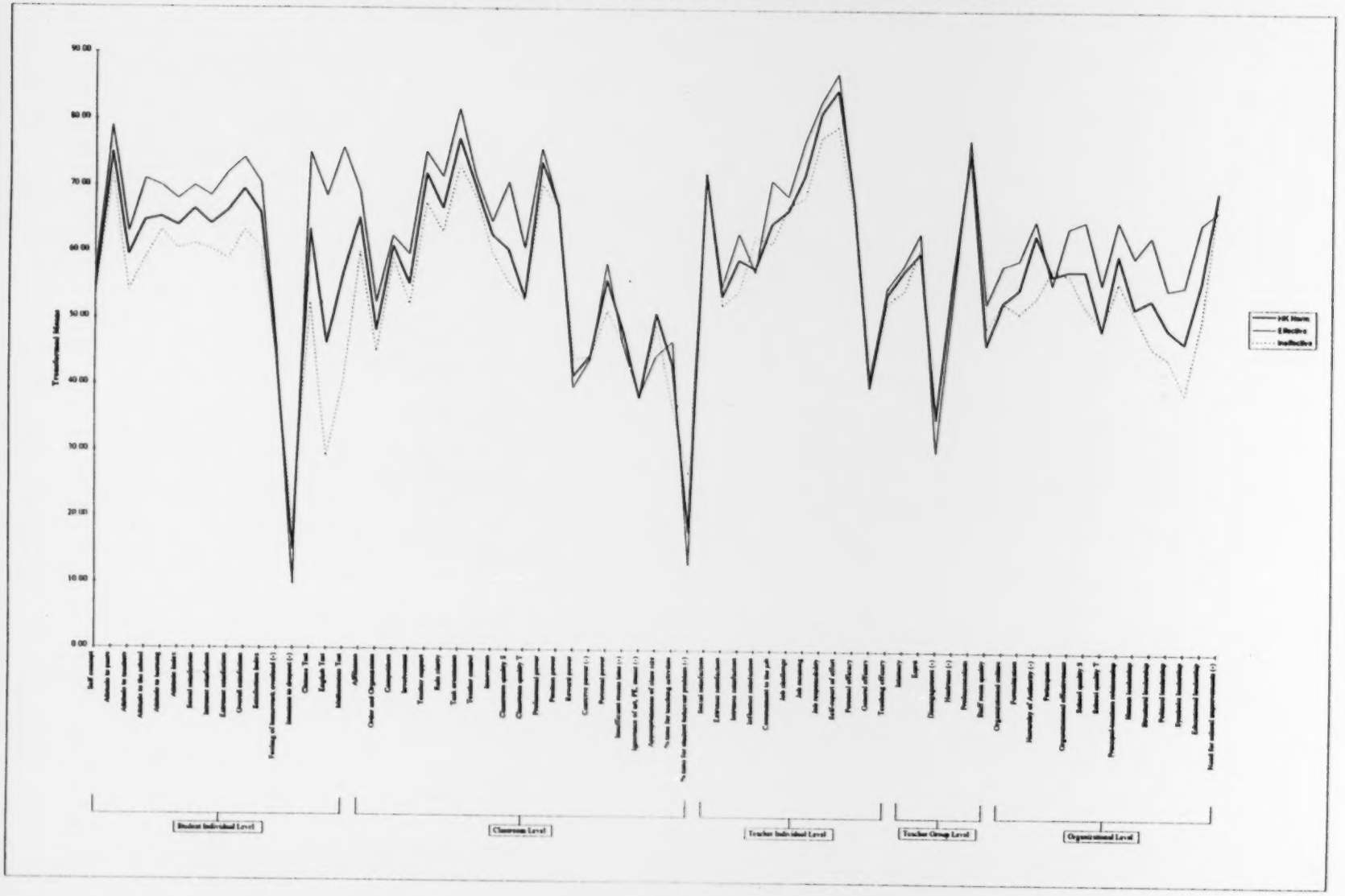






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**Table 2.3**
**Characteristics of Effective and Ineffective Schools in Process and Outcome**

| | Effective School Means | | Ineffective School Means | |
|---|---|---|---|---|
| Indicators | Raw | Transformed | Raw | Transformed |
| <Student attitudes> | | | | |
| Self concept | 3.27 | 56.75 | 3.14 | 53.5 |
| Attitude to peers | 4.16 | 79 | 3.87 | 71.75 |
| Attitude to teachers | 3.52 | 63 | 3.17 | 54.25 |
| Attitude to the school | 3.84 | 71 | 3.36 | 59 |
| Attitude to learning | 3.80 | 70 | 3.53 | 63.25 |
| Attitude Index | 3.72 | 68 | 3.42 | 60.5 |
| <Student satisfaction in school> | | | | |
| Social satisfaction | 3.80 | 70 | 3.45 | 61.25 |
| Intrinsic satisfaction | 3.74 | 68.5 | 3.42 | 60.5 |
| Extrinsic satisfaction | 3.88 | 72 | 3.36 | 59 |
| Overall satisfaction | 3.97 | 74.25 | 3.53 | 63.25 |
| Satisfaction Index | 3.82 | 70.5 | 3.43 | 60.75 |
| <Negative Feelings> | | | | |
| Feeling of homework overload (-) | 2.84 | 46 | 2.73 | 43.25 |
| Intention to dropout (-) | 1.39 | 9.75 | 1.75 | 18.75 |
| <Attainment test results> | | | | |
| Chinese | 75.06 | 75.06 | 52.32 | 52.32 |
| English | 68.52 | 68.52 | 29.24 | 29.24 |
| Mathematics | 28.81 | 75.82 | 15.25 | 40.13 |
| <Classroom climate> | | | | |
| Affiliation | 3.77 | 69.25 | 3.40 | 60 |
| Order and Organization | 3.10 | 52.5 | 2.80 | 45 |
| Competition | 3.50 | 62.5 | 3.36 | 59 |
| Involvement | 3.39 | 59.75 | 3.09 | 52.25 |
| Teacher support | 4.01 | 75.25 | 3.70 | 67.5 |
| Rule clarity | 3.86 | 71.5 | 3.53 | 63.25 |
| Task orientation | 4.27 | 81.75 | 3.93 | 73.25 |
| Teacher control | 3.86 | 71.5 | 3.74 | 68.5 |
| Innovation | 3.59 | 64.75 | 3.40 | 60 |
| <Quality of classroom physical environment> | | | | |
| perceived by students | 3.83 | 70.75 | 3.22 | 55.5 |
| perceived by teachers | 3.43 | 60.75 | 3.12 | 53 |
| <Power bases of class master> | | | | |
| Professional power | 4.03 | 75.75 | 3.81 | 70.25 |
| Position power | 3.69 | 67.25 | 3.69 | 67.25 |
| Reward power | 2.59 | 39.75 | 2.76 | 44 |
| Coercive power (-) | 2.76 | 44 | 2.78 | 44.5 |
| Personal power | 3.34 | 58.5 | 3.05 | 51.25 |
| <Classroom arrangements> | | | | |
| Insufficient recess time (-) | 2.85 | 46.25 | 2.86 | 46.5 |
| Ignorance of art, PE and music (-) | 2.54 | 38.5 | 2.53 | 38.25 |
| Appropriateness of class size | 2.78 | 44.5 | 2.97 | 49.25 |

| Indicators | Effective School Means | | Ineffective School Means | |
|---|---|---|---|---|
| | Raw | Transformed | Raw | Transformed |
| % time for teaching activities ## | 2.87 | 46.75 | 2.48 | 37 |
| % time for student behavior problem (-) ### | 1.52 | 13 | 2.07 | 26.75 |
| <Job satisfaction> | | | | |
| Social satisfaction | 5.33 | 72.17 | 5.27 | 71.17 |
| Extrinsic satisfaction | 4.31 | 55.17 | 4.13 | 52.17 |
| Intrinsic satisfaction | 4.79 | 63.17 | 4.27 | 54.5 |
| Influence satisfaction | 4.44 | 57.33 | 4.76 | 62.67 |
| <Job attitudes/feelings> | | | | |
| Commitment to the job | 5.27 | 71.17 | 4.70 | 61.67 |
| Job challenge | 5.13 | 68.83 | 5.04 | 67.33 |
| Job meaning | 5.62 | 77 | 5.12 | 68.67 |
| Job responsibility | 5.98 | 83 | 5.66 | 77.67 |
| Self-report of effort | 6.24 | 87.33 | 5.76 | 79.33 |
| <Teaching efficacy> | | | | |
| Personal efficacy | 3.73 | 68.25 | 3.63 | 65.75 |
| General efficacy | 2.66 | 41.5 | 2.60 | 40 |
| Teaching efficacy | 3.20 | 55 | 3.11 | 52.75 |
| <Social norms> | | | | |
| Intimacy | 4.50 | 58.33 | 4.28 | 54.67 |
| Esprit | 4.80 | 63.33 | 4.66 | 61 |
| Disengagement (-) | 2.82 | 30.33 | 3.18 | 36.33 |
| Hindrance (-) | 4.21 | 53.5 | 4.44 | 57.33 |
| <Professionalism> | 5.65 | 77.5 | 5.49 | 74.83 |
| <Quality of staff room physical environment> perceived by teachers | 3.11 | 52.75 | 2.96 | 49 |
| <Strength of Organizational Culture> | 3.34 | 58.5 | 3.12 | 53 |
| <Organizational structure> | | | | |
| Formalization | 4.56 | 59.33 | 4.08 | 51.33 |
| Hierarchy of authority (-) | 4.92 | 65.33 | 4.22 | 53.67 |
| Participation | 4.34 | 55.67 | 4.48 | 58 |
| <Organizational effectiveness> | 3.57 | 64.25 | 3.28 | 57 |
| <Quality of school physical environment> | | | | |
| perceived by students | 3.61 | 65.25 | 3.09 | 52.25 |
| perceived by teachers | 3.23 | 55.75 | 2.97 | 49.25 |
| <Principal-teachers relationship> | 4.92 | 65.33 | 4.36 | 56 |
| <Principal's Leadership> | | | | |
| Human leadership | 4.59 | 59.83 | 4.08 | 51.33 |
| Structural leadership | 4.78 | 63 | 3.78 | 46.33 |
| Political leadership | 4.30 | 55 | 3.67 | 44.5 |
| Symbolic leadership | 4.33 | 55.5 | 3.36 | 39.33 |
| Educational leadership | 4.90 | 65 | 4.01 | 50.17 |
| <Need for school improvements> | 5.02 | 67 | 5.17 | 69.5 |

## 1, 2, 3, 4, 5 represents 0%, 25%, 50%, 75% and 100% of class time used for teaching activities respectively

### 1, 2, 3, 4, 5 represents 0%, 25%, 50%, 75% and 100% of class time used for student problems respectively